Exam Code: 0433
Sub. Code: 3455

2122

M.Sc. (Applied Chemistry/Pharmaceutical)
Third Semester
Paper – 303: Unit Pharmaceutical Operations

Time allowed: 3 Hours

Max. Marks: 60

***NOTE**: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

1 Briefly differentiate between the following- 4×3

i. Mixing and homogenization
ii. Clarification and filtration
iii. Azeotropic distillation and extractive distillation
iv. Compression and consolidation of pharmaceutical powder

Unit I

2 a) Discuss the comparison of planetary mixer with agitator mixer 6,6
b) Write a note on principles and mechanisms of fluid mixing

3 Write a note on the following 6,6
a) Compare plate filter press versus frame filter press
b) Write a note on sterile filter operations

Unit II

4 a) Discuss briefly angle of repose and mass-volume force relationship of pharmaceutical powders. 6,6
b) Discuss various granulation properties and strength of granules of pharmaceutical powder

5 Write a short note on 6,6
a) Basket centrifuge
b) Principles of centrifugation

Unit III

6 Write a note on 4,4,4
a) Heat transfer coefficient
b) Durhing line
c) Single and multiple effect evaporator

7 Discuss the following 6,6
a) Fick's law and its Pharmaceutical application
b) Two film theory

Unit IV

8 a) Define drying. Discuss various drying operations and related equipment. 8,4
b) Types of crystallizers

9 Discuss the following 6,6
a) Dalton's law and Henry law
b) Methods of distillation

x-x-x